PATENT ABSTRACTS OF JAPAN

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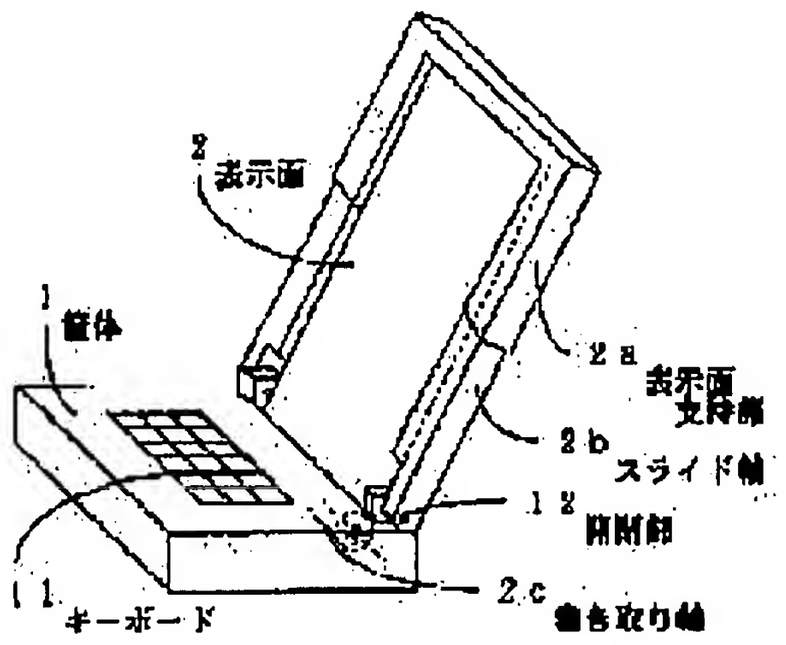
(54) INFORMATION PROCESSOR AND DISPLAY DEVICE THEREFOR

(57)Abstract:

PROBLEM TO BE SOLVED: To make a display surface expandable to a size capable of displaying a graphic and a chart or the like while making them continuous by making a device the structure in which a display surface is erected rearward an operation part at the time of a use and the surface is possible to be integrated with the operation part and a control part while being turned forward at the time of a non-use.

SOLUTION: A keyboard 11 and opening and closing parts 12 whose slide shafts 2b can be rotated are formed on the upper part of a case 1 and a control part and a winding shaft 2c stretching a flexible display surface 2 by winding the lower part of the display surface 2 are provided in the inner part of the inside of the case 1.

Display supporting parts 2a support the upper part of the display surface 2 and are enabled to rise and fall along slide shafts 2b and are made so as keep their positions at an arbitrary height by the friction of a spring as a stopper or the like. Plural elements of the display surface 2 and the control part are connected by a flexible printed wiring sheet, etc. When the area of the display surface 2 is required to be minimized, the display surface 2 may be wound round the winding shaft 2c by pushing down the display surface supporting part 2a downward and after the use, the display supporting parts 2a is turned forward to be integrated with the case



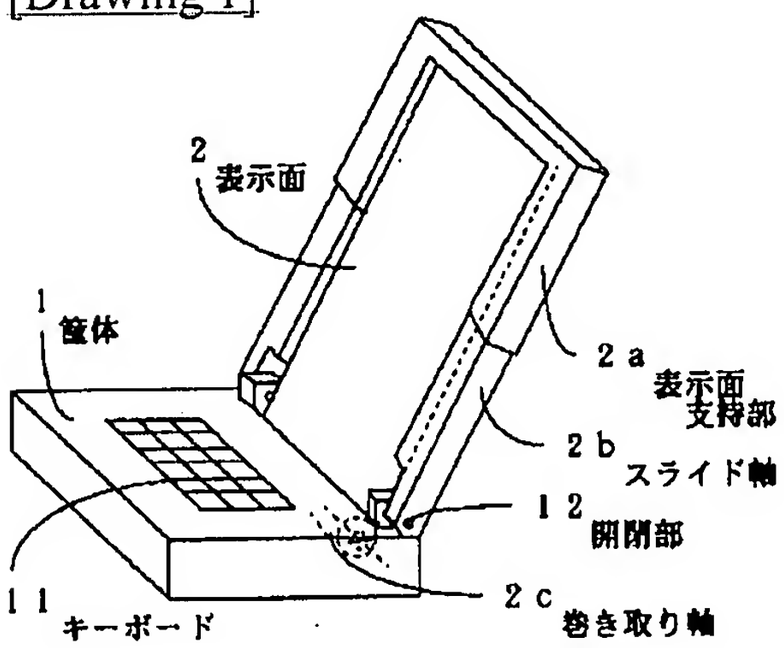
DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] The perspective view of the example of this invention
[Drawing 2] The perspective view of other examples of this invention
[Drawing 3] (a) of another example of this invention The perspective view of an ordinary busy condition, and (b) Perspective view at the time of screen expansion
[Description of Notations]
1 Case
2 Screen
2a Screen supporter
2b Slide shaft
2c Rolling-up shaft
2d Drawing-in shaft
7 Up Screen
7a Screen supporter
8 Lower Screen
8a Sliding shaft
11 Keyboard
12 Closing Motion Section

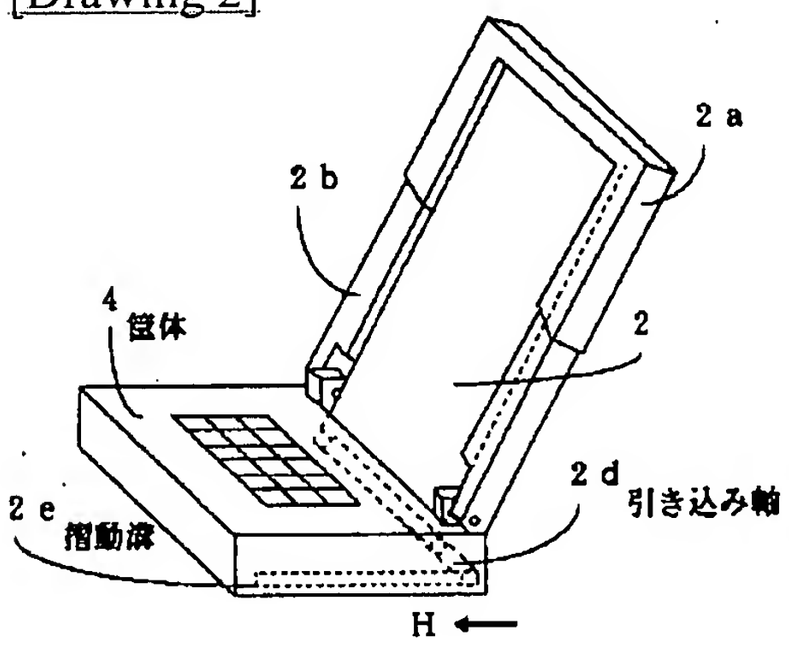
[Translation done.]

DRAWINGS

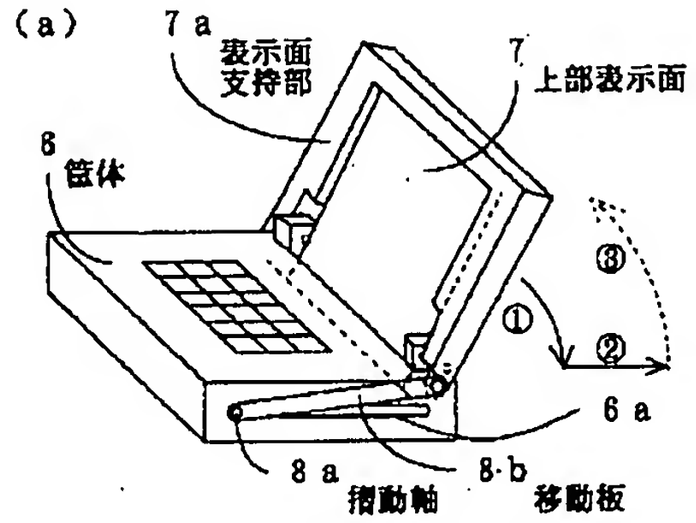
[Drawing 1]

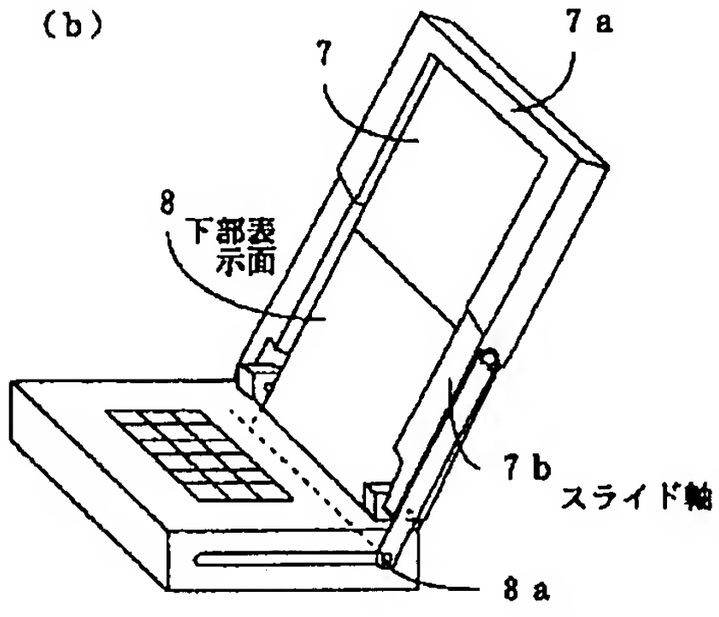


[Drawing 2]



[Drawing 3]





[Translation done.]

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to the structure of the display used for an information processor and these information processors, such as a computer of portable one apparatus called the laptop type and notebook mold, and a word processor.
[0002]
[Description of the Prior Art] Although the information processor about this invention has a miniaturization with an important technical problem, many amelioration is made and development is continued, a display also cannot but become small by this. However, the contents of a display are also great just like the workstation by one side by the formation of small large capacity of data memory or an auxiliary storage unit, improvement in the speed of the arithmetic unit abbreviated to CPU, etc. In this situation, in order to expand the screen, two or more flat-surface panels which are drops are connected, and the approach of folding up at the time of un-using it, and containing is proposed by JP,3-58108,A (**** type flat-surface mold display of Toyo Communication Equipment Co., Ltd.), JP,5-61635,A (information processor of Hitachi, Ltd.), JP,5-298257,A (pocket mold electronic equipment of Toshiba Corp.), etc. If these approaches are used, package presenting of the multi-page information which cannot be displayed on one screen will be attained, and convenience will improve.
[0003]
[Problem(s) to be Solved by the Invention] In the example stated by the Prior art, since each screen is connected with moving parts, such as a hinge, the non-display section surely exists in the boundary of each screen. Therefore, although it is convenient when displaying the contents from which data and the attribute like a character string differ, GURAFIKU, a table, etc. make an image continue and cannot be displayed, for example.
[0004] The technical problem of this invention is offer of the portable information processor which can expand the screen to the magnitude which GURAFIKU, a table, etc. are made to continue and can be displayed, and this display.
[0005]
[Means for Solving the Problem] This invention is the display of the portable information processor with which a control unit is prepared in the upper part of the case with which it consists of a control unit, a control section, and a display, and a control section is contained. The flexible screen, The screen supporter on which a rotational core can slide in accordance with two slide shafts formed in the lower part, and this slide shaft, It consists of lower shafts in the stopper which fixes this screen supporter to a slide shaft, and the case which makes the screen stretch, is stood to control unit back at the time of use, and is the structure which rotates ahead and can be united with a control unit and a control section at the time of un-using it.
[0006] Moreover, this invention is a portable information processor with which a control unit is prepared in the upper part of the case with which it consists of a control unit, a control section, and a display, and a control section is contained, a display is a display according to claim 1, and further, a lower shaft is the structure of sliding on the bottom of a control unit, when the structure which is formed in the lower part of a SUSURAIDO shaft and rolls round the screen, or the screen fluctuates.
[0007] This invention is a portable information processor with which a control unit is prepared in the upper part of the case with which it consists of a control unit, a control section, and a display, and a control section is contained. And a display The screen supporter on which a rotational core can slide in accordance with two slide shafts formed in the lower part, and this slide shaft, and the screen located on the back upper part of a control unit by one, It consists of a stopper which fixes this screen supporter to a slide shaft, and the lower screen which is crooked in the lower limit of said screen and located under a control unit. The lower screen It is the structure which is drawn out up by the screen of the upper part rotated back, and becomes one field with the upside screen. Further the upside screen A flection parallel

to a flection with the lower screen is formed in said flection upper part, and it is the structure which is crooked ahead and can be united with a control unit and a control section at the time of un-using it.
[0008]
[Embodiment of the Invention] This invention is the structure of expanding a display by the expansion from the plane which one part turnable to the screen prepared at least, for example, the drawer and crookedness condition from the enlargement from the rolling-up section of a liquid crystal display or an electroluminescence drop, and flat-surface receipt.
[0009]
[Example]
Example 1: Drawing 1 is the busy condition Fig. of an example of this invention, and a keyboard 11 and the closing motion section 12 which can rotate slide shaft 2b are formed in the upper part of a case 1, and it prepares rolling-up shaft 2c which makes the lower part of the flexible screen 2 roll and stretch in the interior of a case 1 at non-illustrated a control section and the internal back. Screen supporter 2a supports the upper part of the screen 2, can go up and down it along with slide shaft 2b, and enables it to maintain the location in the height of arbitration by friction of a spring etc. as a stopper of claim 1. Two or more components and control sections of the screen 2 twist these wiring on a non-illustrated flexible-printed-wiring sheet etc., although it connects with much wiring. When making area of the screen 2 into min, after use rotates screen supporter 2a ahead using the closing motion section 12, and is made to unite with a case 1 that what is necessary is to push screen supporter 2a to a lower part, to roll round the screen 2, and just to wind around a shaft.
[0010] Example 2 : Drawing 2 is drawing showing other busy conditions of this invention, and is replaced with rolling-up shaft 2c of the screen 2 of drawing 1 . Draw in a case 4, prepare 2d of shafts, and sliding slot 2e, and 2d of drawing-in shafts is lengthened in the direction of H by the device in which it does not illustrate. It will draw, if screen supporter 2a is taken down to a lower limit like drawing 1 , and 2d of rods slides on sliding slot 2e, they enter, and after use makes screen supporter 2a unite with a case 1.
[0011] Example 3: Drawing 3 is drawing showing this invention into which the screen is divided rotatable up and down, and is (a). Drawing when using only the up screen, and (b) It is drawing when also using the lower screen. In the lower part in a case 6, the lower screen 8 which is not illustrated [rotatable] is contained in the lower part of the up screen 7. The lower part of screen supporter 7a supporting the upper part of the up screen 7 is connected to the lower screen 8 and migration plate 8b which can move sliding shaft 8a of one along with slot 6a. When expanding the screen, the location attaching part article which is not illustrated [which was prepared in slide shaft 7b] is removed, screen supporter 7a is rotated in the ** direction, and it lengthens in the ** direction along with slide shaft 7b, and after fixing screen supporter 7a to slide shaft 7b with a non-illustrated stopper, it returns in the ** direction again. Claim 6 is (a) of drawing 3 . The flection which is not illustrated [parallel to a flection with the lower screen 8] is formed in up screen 7 lower part, and it is the structure which is crooked ahead and can be united with a control unit and a control section at the time of un-using it.
[0012]
[Effect of the Invention] Since the structure where area displayed using the flexible screen is made to the magnitude of arbitration from fixed magnitude to the maximum area, and the screen is divided rotatable up and down in magnitude equivalent to conventional equipment is used according to this invention, the portable information processor which can double area displayed continuously, and this display can be offered.

[Translation done.]

CLAIMS

[Claim(s)]
[Claim 1] It is the display of the portable information processor with which a control unit is prepared in the upper part of the case with which it consists of a control unit, a control section, and a display, and a control section is contained. The flexible screen, The screen supporter on which a rotational core can slide in accordance with two slide shafts formed in the lower part, and this slide shaft, It is the display of the information processor characterized by consisting of lower shafts in the stopper which fixes this screen supporter to a slide shaft, and the case which makes the screen stretch, being stood to control unit back at the time of use, rotating ahead at the time of un-using it, and being able to unite with a control unit and a control section.
[Claim 2] It is the information processor which is a portable information processor with which a control unit is prepared in the upper part of the case with which it consists of a control unit, a control section, and a display, and a control section is contained, and is characterized by a display being a display according to claim 1.
[Claim 3] It is the information processor characterized by the structure which it is an information processor according to claim 2, and a lower shaft is formed in the lower part of a slide shaft, and rolls round the screen.
[Claim 4] It is the information processor characterized by the structure of sliding on the bottom of a control unit when it is an information processor according to claim 2 and the screen goes up and down a lower shaft.
[Claim 5] It is the portable information processor with which a control unit is prepared in the upper part of the case with which it consists of a control unit, a control section, and a display, and a control section is contained. A display The screen supporter on which a rotational core can slide in accordance with two slide shafts formed in the lower part, and this slide shaft, and the screen located on the back upper part of a control unit by one, It consists of a stopper which fixes this screen supporter to a slide shaft, and the lower screen which is crooked in the lower limit of said screen and located under a control unit. The lower screen The information processor characterized by the structure which is drawn out up by the screen of the upper part rotated back, and becomes one field with the upside screen.
[Claim 6] It is the information processor characterized by the structure which it is an information processor according to claim 5, and a flection with the upside screen parallel to a flection with the lower screen is formed in said flection upper part, and it is ahead crooked at the time of un-using it, and can be united with a control unit and a control section.

[Translation done.]